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(54) **DORMANCY TIMER ADJUSTMENT IN A WIRELESS ACCESS NODE BASED ON WIRELESS DEVICE APPLICATION STATUS**

(71) Applicant: **Sprint Communications Company L.P.**, Overland Park, KS (US)

(72) Inventors: **Maulik K. Shah**, Overland Park, KS (US); **Jason Peter Sigg**, Overland Park, KS (US); **Ashish Bhan**, Shawnee, KS (US); **Jasinder Pal Singh**, Olathe, KS (US)

(73) Assignee: **Sprint Communications Company L.P.**, Overland Park, KS (US)

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(58) **Field of Classification Search**
CPC G06F 9/54; G06F 9/4443; H04L 41/0213; H04L 67/10
USPC 719/310; 709/201
See application file for complete search history.

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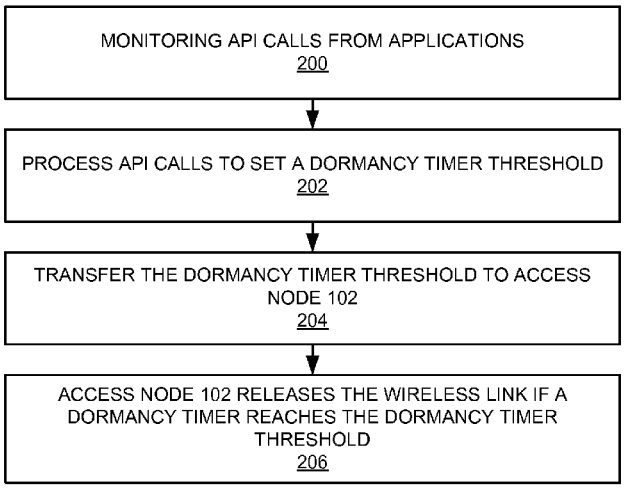
Primary Examiner — Lechi Truong

(57) **ABSTRACT**

A wireless communication device determines user interface activity initiated by a user application. The wireless communication device determines a timer setting based on the user interface activity initiated by the user application. The wireless communication device wirelessly transfers the timer setting to a wireless communication network. The wireless communication device exchanges wireless communications initiated by the user application with the wireless communication network. The wireless communication network uses a dormancy timer based on the user interface activity initiated by the user application.

19 Claims, 6 Drawing Sheets



(51) **Int. Cl.**

H04W 72/04	(2009.01)
G06F 9/54	(2006.01)
H04L 29/08	(2006.01)
H04L 5/00	(2006.01)
G06F 9/44	(2006.01)
G06F 11/30	(2006.01)
H04W 52/02	(2009.01)

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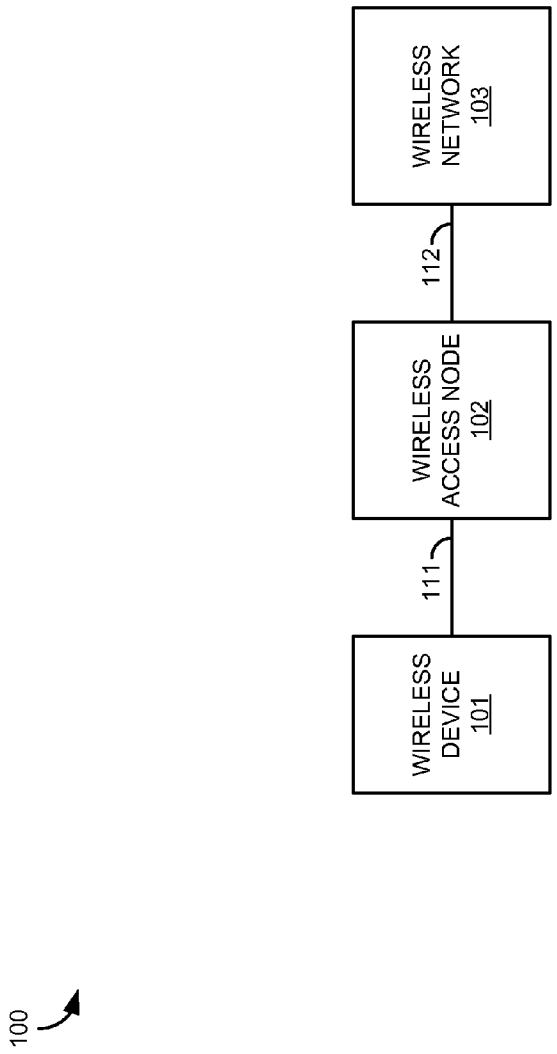
WIRELESS NETWORK 103
112
WIRELESS ACCESS NODE 102
111
WIRELESS DEVICE 101
100

FIGURE 1

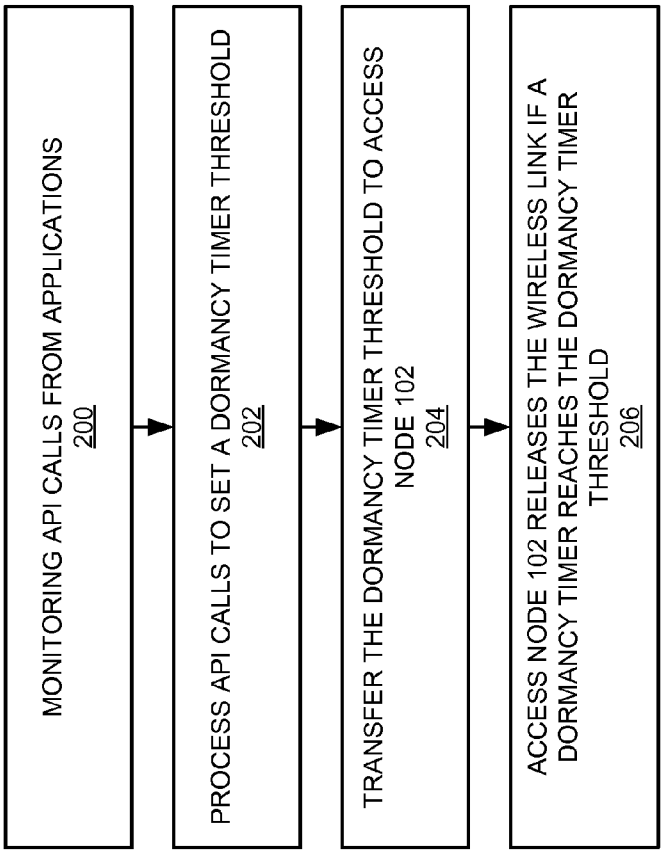
MONITORING API CALLS FROM APPLICATIONS
200
PROCESS API CALLS TO SET A DORMANCY TIMER THRESHOLD
202
TRANSFER THE DORMANCY TIMER THRESHOLD TO ACCESS NODE 102
204
ACCESS NODE 102 RELEASES THE WIRELESS LINK IF A DORMANCY TIMER REACHES THE DORMANCY TIMER THRESHOLD
206

FIGURE 2

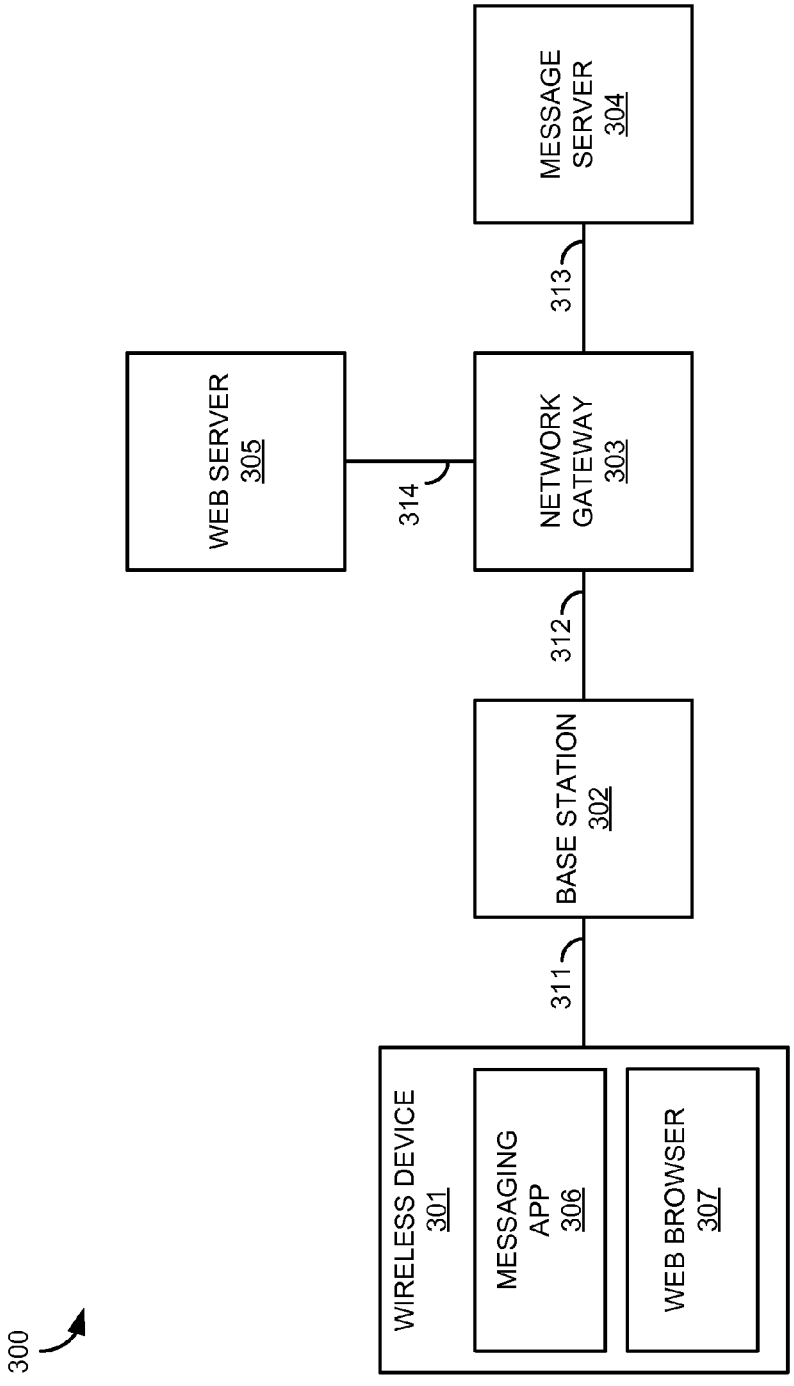
300
WIRELESS DEVICE
301
MESSAGING
APP
306
WEB BROWSER
307
311
BASE STATION
302
312
NETWORK
GATEWAY
303
314
WEB SERVER
305
313
MESSAGE
SERVER
304

FIGURE 3

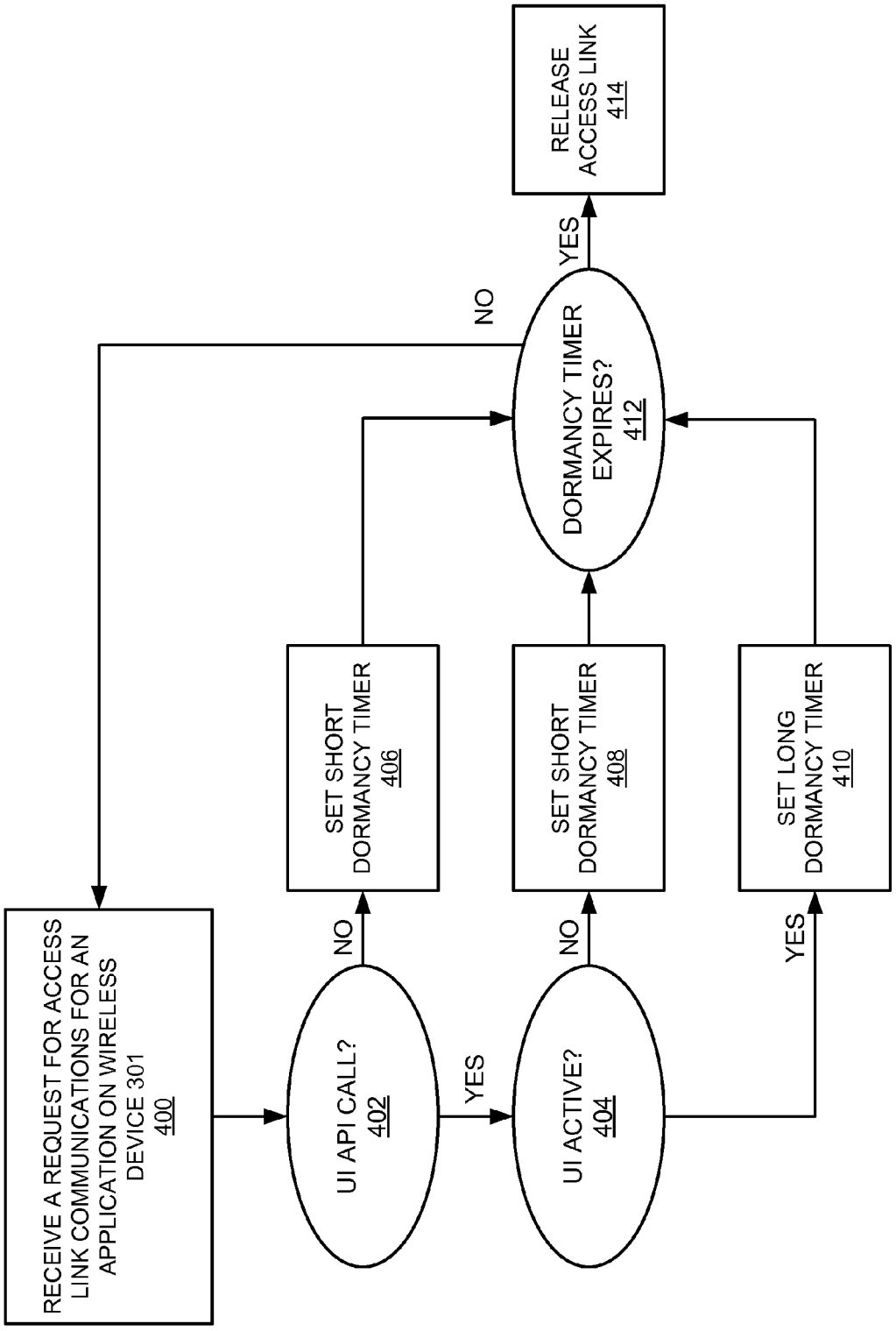
RECEIVE A REQUEST FOR ACCESS LINK COMMUNICATIONS FOR AN APPLICATION ON WIRELESS DEVICE 301
400
UI API CALL?
402
NO
YES
UI ACTIVE?
404
NO
YES
SET SHORT DORMANCY TIMER
406
SET SHORT DORMANCY TIMER
408
SET LONG DORMANCY TIMER
410
DORMANCY TIMER EXPIRES?
412
NO
YES
RELEASE ACCESS LINK
414

FIGURE 4

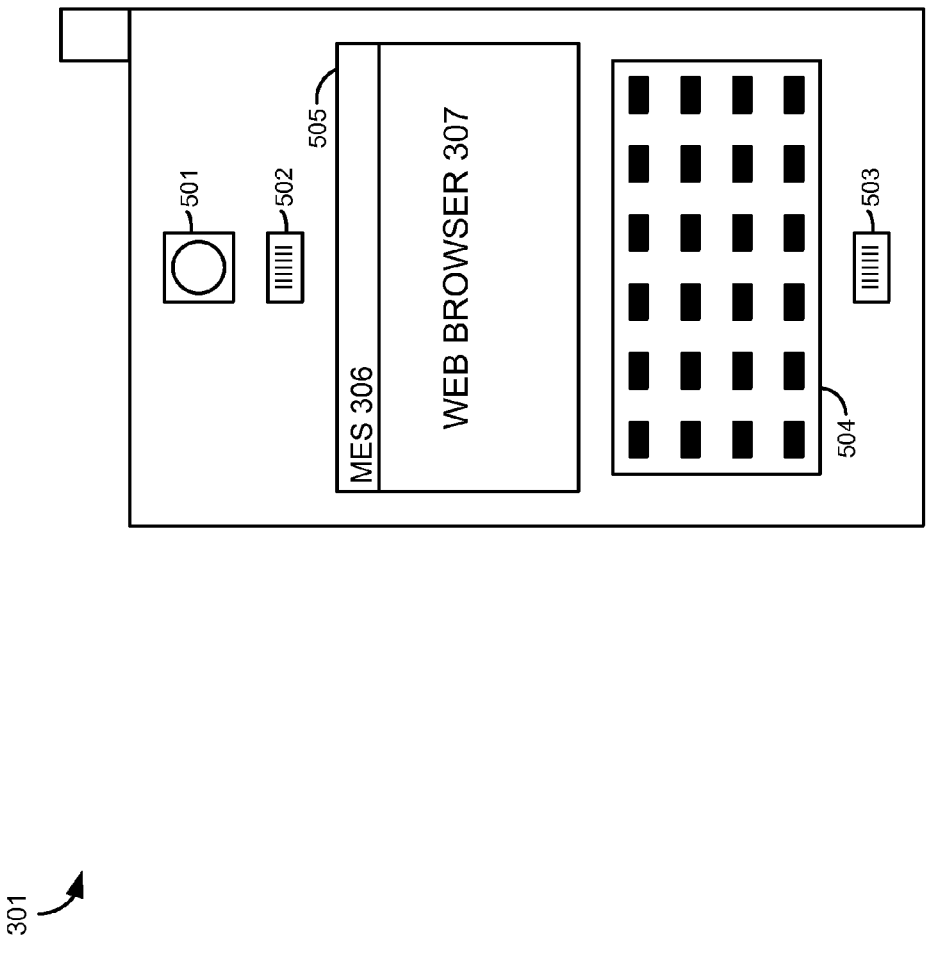

FIGURE 5

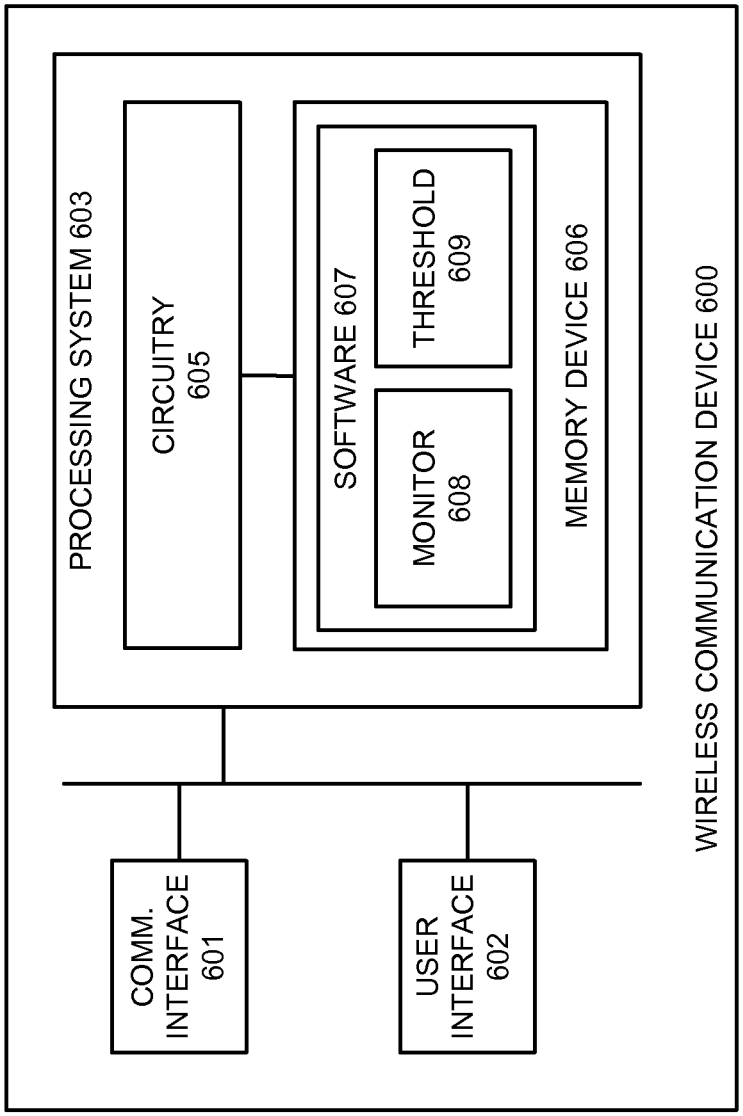
WIRELESS COMMUNICATION DEVICE 600
PROCESSING SYSTEM 603
CIRCUITRY 605
MEMORY DEVICE 606
SOFTWARE 607
MONITOR 608
THRESHOLD 609
COMM. INTERFACE 601
USER INTERFACE 602

FIGURE 6

DORMANCY TIMER ADJUSTMENT IN A WIRELESS ACCESS NODE BASED ON WIRELESS DEVICE APPLICATION STATUS

RELATED CASES

This patent application is a continuation of U.S. patent application Ser. No. 13/074,198 that was filed on Mar. 29, 2011 now U.S. Pat. No. 8,667,513 and that is entitled "DORMANCY TIMER ADJUSTMENT IN A WIRELESS ACCESS NODE BASED ON WIRELESS DEVICE APPLICATION STATUS." U.S. patent application Ser. No. 13/074,198 is hereby incorporated by reference into this patent application.

TECHNICAL BACKGROUND

A wireless access node that is used by wireless devices to communicate with a wireless network has a limited amount of bandwidth to allocate among connected wireless devices. This limited bandwidth is allocated by assigning a wireless access link (or channel) to each wireless device that needs to exchange communications. A dormancy timer in the access node tracks the amount of time since a wireless device last exchanged communications so that, when a certain amount of time has passed, the access node can release the access link for that device. Once released, the access link can be assigned to other wireless devices that need to exchange communications with the access node. Allowing the access link to stay allocated to a wireless device for a time after communications have completed enables subsequent communications to be exchanged without the need to reallocate an access link to the wireless device.

Many wireless devices are capable of executing applications that require the use of an access link for wireless communications. Sometimes these applications will run in the background where a user is not actively interacting with the application and sometimes they will run in the foreground where a user is actively interacting with the application. When a user is actively interacting with an application it is more likely that an application will exchange subsequent communications over an access link than would an application running in the background. Thus, the user experience of an application running in the foreground may benefit from not needing to take the time necessary to have a new access link allocated to the wireless device in order to exchange subsequent communications.

Overview

A wireless communication device determines user interface activity initiated by a user application. The wireless communication device determines a timer setting based on the user interface activity initiated by the user application. The wireless communication device wirelessly transfers the timer setting to a wireless communication network. The wireless communication device exchanges wireless communications initiated by the user application with the wireless communication network. The wireless communication network uses a dormancy timer based on the user interface activity initiated by the user application.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** illustrates a wireless communication system for adjusting a dormancy timer in a wireless access node based on wireless device application status.

FIG. **2** illustrates the operation of a wireless communication system for adjusting a dormancy timer in a wireless access node based on wireless device application status.

FIG. **3** illustrates a wireless communication system for adjusting a dormancy timer in a wireless access node based on wireless device application status.

FIG. **4** illustrates the operation of a wireless communication system for adjusting a dormancy timer in a wireless access node based on wireless device application status.

FIG. **5** illustrates a wireless communication device for adjusting a dormancy timer in a wireless access node based on wireless device application status.

FIG. **6** illustrates a wireless communication device for adjusting a dormancy timer in a wireless access node based on wireless device application status.

DETAILED DESCRIPTION

The following description and associated figures teach the best mode of the invention. For the purpose of teaching inventive principles, some conventional aspects of the best mode may be simplified or omitted. The following claims specify the scope of the invention. Note that some aspects of the best mode may not fall within the scope of the invention as specified by the claims. Thus, those skilled in the art will appreciate variations from the best mode that fall within the scope of the invention. Those skilled in the art will appreciate that the features described below can be combined in various ways to form multiple variations of the invention. As a result, the invention is not limited to the specific examples described below, but only by the claims and their equivalents.

FIG. **1** illustrates wireless communication system **100**. Wireless communication system **100** includes wireless communication device **101**, wireless access node **102**, and wireless communication network **103**. Wireless communication device **101** and wireless access node **102** communicate over wireless link **111**. Wireless access node **102** and wireless communication network **103** communicate over communication link **112**.

In operation, access node **102** has a limited amount of radio frequency spectrum bandwidth that can be allocated among connected wireless devices. This limited amount of spectrum is divided among a number of wireless access links. An access link is only assigned to wireless device **101** when wireless device **101** needs an access link to exchange communications with access node **102**. During periods of time when wireless device **101** does not need to exchange communications, access node **102** does not assign an access link to wireless device **101** so that the access link can be assigned to other devices that do need to exchange communications with access node **102**.

Access node **102** controls the allocation of access links among wireless devices by using a dormancy timer for each access link assigned to a wireless device. In particular, a dormancy timer for wireless device **101** keeps track of the amount of time that has elapsed since wireless device **101** last exchanged communications over an assigned access link. The dormancy timer is typically set to allow enough time for successive communications to be exchanged without wireless device **101** needing to request another access link from access node **102**. Once the dormancy timer indicates that the set amount of time has passed since wireless device **101** last exchanged communications, access node **102** releases the access link from wireless device **101** so that the access link can be allocated to other devices that may need to exchange communications with access node **102**.

FIG. **2** illustrates the operation of wireless communication system **100** for adjusting a dormancy timer in a wireless access node based on wireless device application status. Wireless device **101** is a wireless device, such as a cellular phone, laptop computer, or any other type of wireless device that is capable of executing applications that require wireless communications with wireless network **103** via access node **102**. These applications may include web browsers, messaging, email, social networking, Voice over Internet Protocol, streaming media, or any other type of application capable of executing on a wireless device.

Wireless device **101** begins the operation by monitoring Application Programming Interface (API) calls from the applications for user interface functions and monitoring the status of user interface components (step **200**). The applications executing on wireless device **101** make API calls to the operating system of wireless device **101** in order to access the functions of wireless device **101**. Moreover, API calls for user interface functions include API calls that access input or output functions of various user interfaces on wireless device **101**, such as a display, speaker, keyboard, LED notifier, microphone, or any other type of user input or output interface.

For example, if an application needs to show something on a display of wireless device **101**, then the application will call an API for a display function of wireless device **101**. Wireless device **101** may include multiple user interfaces of a certain user interface type, such as multiple displays or microphones, with each of these multiple user interfaces having separate APIs. Additionally, there may be multiple APIs for each individual user interface. For example, one API may be called to show a notification on a display while a second API may be called for the display to display an application full screen.

The user interface components may be monitored selectively or wireless device **101** may monitor all user interface components of wireless device **101**. For example, wireless device **101** may monitor the status of only the user interface components that are subject to API calls by the applications or wireless device **101** may monitor all user interface components in order to know the current state of all components. The status of the user interface components includes any type of status information, such as display on/off state, display brightness, speaker on/off state, speaker volume, keyboard slide out state (for a slide out keyboard), keypad lock, or any other type of status information for user interface components.

The API calls for the user interface functions and the status of the user interface components are processed to set a dormancy timer threshold (step **202**). If there is no API call to a user interface function, then the dormancy timer threshold is set to a lower value. Likewise, if there is an API call to a user interface function but the status of the user interface components that are called by the API is set to off, then the dormancy timer threshold is also set to a lower value. The off state may include a state where the user interface components are not in use. For example, while speakers of wireless device **101** may still be technically on, the volume setting on wireless device **101** may be turned all the way down or muted. In a similar example, a keyboard for wireless device **101** may still be considered to be on but is in a closed position so as it would not or could not be used.

The threshold is set to a lowered value because the application is determined to be running in the background on wireless device **101**. This determination is due to the lack of user interface API calls indicates that the user is not interacting with the application. Therefore, a shorter dormancy timer threshold is desirable because the user experience does not suffer as much if a background application needs a wireless link reallocated for subsequent communication exchanges with wireless access node **102**. Similarly, it is typically the case that applications running in the background need to exchange communications less frequently than those running in the foreground, thereby, reducing the need for continued allocation of an access link for subsequent communications.

Alternatively, if there is an API call to a user interface function and the user interface component associated the call has a status set to on, then the application is considered to be running in the foreground. Consequently, the dormancy timer threshold is increased to a higher value than would otherwise be set had the application been running in the background. For example, the dormancy timer threshold may be increased to 10 seconds for an application running in the foreground as opposed to 1 second, or possibly even zero seconds, for an application running in the background.

The threshold is set to a higher value because the application is determined to be running in the foreground on wireless device **101**. This determination is due to the user interface API calls being directed to a user interface component that has a status of currently being active or on, which indicates that the user is more likely to be interacting with the application. Therefore, a longer dormancy timer threshold is desirable because it is more likely that the application will exchange subsequent communications that require an access link. The user experience is be less likely to suffer if wireless device **101** is able to hold on to the access link assigned to wireless device **101** for a longer period of time so that any subsequent communications do not need to request a new access link from access node **102**.

In some embodiments, wireless device **101** may not determine whether the user interface component that is called by the API is active. In those embodiments, an application is considered to be running in the foreground in the event of an API call to a user interface function without the need to determine the status of the user interface component that is called.

In some embodiments, both foreground and background applications may be executing on wireless device **101**. In those embodiments, the increased dormancy timer threshold set for any foreground applications overcomes the shorter dormancy timer threshold that would otherwise be set for any background applications.

After wireless device **101** has determined the dormancy timer threshold, wireless device **101** transfers the dormancy timer threshold to access node **102** on wireless network **103** (step **204**). The dormancy timer threshold may be transmitted to access node **102** in a message over the access link or over a control channel for control communications between wireless device **101** and access node **102**. Furthermore, a probe used by wireless device **101** to determine whether an access link is currently active for wireless device **101** may contain the message indicating the dormancy timer threshold.

Access node **102** in turn releases a wireless access link assigned to wireless device **101** if a dormancy timer for wireless device **101** reaches the dormancy timer threshold (step **206**). If the dormancy timer counts up the amount of time elapsed since the last communications were exchanged between access node **102** and wireless device **101**, then access node **102** will release the access link for wireless device **101** when the dormancy timer counts up to the dormancy timer threshold. Hence, if the dormancy timer threshold is 10 seconds then the dormancy timer will count from 0 up to 10 seconds before releasing the access link. Alternatively, the dormancy timer may count down from the last time communications were exchanged between access node **102**

and wireless device **101**. In that case, the dormancy timer threshold may indicate the value from which the dormancy timer counts. Thus, if the timer is set for 10 seconds, then the dormancy timer will start at 10 seconds after the last communications were exchanged and count down to zero before releasing the access channel.

In both dormancy timer examples from above, if subsequent communications are exchanged on the access link before the dormancy timer reaches the dormancy timer threshold, then the dormancy timer may be reset. The dormancy timer threshold may be a different value than it was set to previously depending on whether the application that exchanged those subsequent communications was running in the background or in the foreground. If the subsequent communications were for a background application, then the dormancy timer should be reset only if the dormancy timer threshold would allow a greater amount of time before access link release than what the dormancy timer is currently indicating. This prevents a longer dormancy timer for a running foreground application from being negated by a shorter dormancy timer due to the subsequent communications exchanged by a background application. It follows, therefore, that subsequent communications from a foreground application will always reset the dormancy timer because the dormancy timer threshold is longest for foreground applications.

In view of the above examples, it follows that while an application may be considered to be running in the foreground or background based on traditional conceptions, wireless device **101** may not make the same determination based on the method set forth herein. For example, a music streaming application may continue to stream music from a server and play that music out of a speaker of wireless device **101** while a user interacts with other applications on wireless device **101**. Traditionally, the music streaming application may be considered to be running in the background. However, consistent with the method above, the music streaming application is considered to be running in the foreground for purposes of a dormancy timer threshold because the application is calling an API for a speaker user interface.

Referring back to FIG. **1**, wireless communication device **101** comprises Radio Frequency (RF) communication circuitry and an antenna. The RF communication circuitry typically includes an amplifier, filter, modulator, and signal processing circuitry. Wireless communication device **101** may also include a user interface, memory device, software, processing circuitry, or some other communication components. Wireless communication device **101** may be a telephone, computer, e-book, mobile Internet appliance, wireless network interface card, media player, game console, or some other wireless communication apparatus—including combinations thereof.

Wireless access node **102** comprises RF communication circuitry and an antenna. The RF communication circuitry typically includes an amplifier, filter, RF modulator, and signal processing circuitry. Wireless access node **102** may also comprise a router, server, memory device, software, processing circuitry, cabling, power supply, network communication interface, structural support, or some other communication apparatus. Wireless access node **102** could be a base station, Internet access node, telephony service node, wireless data access point, or some other wireless communication system—including combinations thereof.

Wireless communication network **103** comprises network elements that provide wireless devices with wireless communication access to packet communication services. Wireless network **103** may comprise switches, wireless access nodes, Internet routers, network gateways, application servers, computer systems, communication links, or some other type of communication equipment—including combinations thereof.

Wireless link **111** uses the air or space as the transport media. Wireless link **111** may use various protocols, such as Code Division Multiple Access (CDMA), Evolution Data Only (EVDO), Worldwide Interoperability for Microwave Access (WIMAX), Global System for Mobile Communication (GSM), Long Term Evolution (LTE), Wireless Fidelity (WIFI), High Speed Packet Access (HSPA), or some other wireless communication format. Communication link **112** uses metal, glass, air, space, or some other material as the transport media. Communication link **112** could use various communication protocols, such as Time Division Multiplex (TDM), Internet Protocol (IP), Ethernet, communication signaling, CDMA, EVDO, WIMAX, GSM, LTE, WIFI, HSPA, or some other communication format—including combinations thereof. Communication link **112** could be a direct link or may include intermediate networks, systems, or devices.

FIG. **3** illustrates wireless communication system **300**. Wireless communication system **300** includes wireless communication device **301**, wireless base station **302**, network gateway **303**, message server **304**, and web server **305**. Messaging application **306** and web browser application **307** are executing on wireless device **301**. Wireless communication device **301** and base station **302** communicate over wireless link **311**. Base station **302** and network gateway **303** communicate over communication link **312**. Network gateway **303** and message server **304** communicate over communication link **313**. Network gateway **303** and web server **305** communication over communication link **314**.

FIG. **4** illustrates the operation of wireless communication system **300** for adjusting a dormancy timer in base station **302** based on wireless device **301** application status. In operation, wireless device **301** executes messaging application **306** and web browsing application **307**. Messaging application **306** may exchange any type of messages, such as SMS, MMS, email, Instant Messaging, or some other type of message through messaging server **304**. Messaging server **304** may be located on the Internet, a wireless network that base station **302** is a part of, or any other network or computer system capable of communicating with network gateway **303**. Web browser **307** receives websites for displaying to a user of wireless device **301** via web server **305**, which may be located on the Internet.

Wireless device **301** continually monitors API calls for user interface functions made by messaging application **306**, web browser **307**, and any other applications executing on wireless device **301**. The API calls for the user interface functions are related to user interface components of wireless device **301**. For example, a music player application may use an API call to the speaker to play music, an API call to the display to show what song is playing, and an API call to a keyboard or touch screen so that a user can indicate a desired song to play. Likewise, web browser **307** may make an API call to a display to display a web page and an API call to a keyboard or touch screen to receive a web address.

FIG. **5** illustrates wireless device **301** with user interface components to which the user interface API calls may be directed. In this example, wireless device **301** includes camera **501**, speaker **502**, microphone **503**, keyboard **504**, and display **505**. Wireless device **301** may omit one or more of these components or include further components, such as a second speaker, second camera, notifier LED, or any other type of user interface component.

Referring back to FIG. **4**, web browser **307** requests access link communications so that web browser **307** can retrieve a

web page from web server **305** to display to a user on display **505**. Wireless device **301** recognizes that web browser **307** is requesting access link communications on the access link with base station **302** (step **400**). Wireless device **301** then determines whether web browser **307** made an API call to any of user interfaces **501**-**505** (step **402**). This determination may be made by determining whether any user interface API calls were performed within a certain time period before or after the request for access link communications, for example an API call occurring within one second of the access link communication request.

In this example, web browser had made an API call to present an application interface for web browser **307** on display **505** before the access request. Therefore, the process moves to step **404** where wireless device **101** determines whether display **505** is active to carry out the API call request. If display **505** is not active, then web browser **307** is determined to be running in the background. Since web browser **307** is running in the background, wireless device **301** sets a bit in a probe that determines whether there is an access link (or requests an access link if there is none) that indicates that the dormancy timer for the access link should be set for a short period of time, such as one second (step **408**). In contrast, if display **305** is active at step **404**, then web browser **307** is determined to be running in the foreground. Hence, wireless device **301** sets a bit in the probe that indicates that the dormancy timer for the access link should be set for a longer period of time, such as ten seconds (step **410**).

In another example, returning to step **400**, messaging application **306** requests access link communications so that messaging application **306** can retrieve messages from messaging server **304**. Wireless device **301** recognizes that messaging application **306** is requesting access link communications on the access link with base station **302** (step **400**). Wireless device **301** then determines whether messaging application **306** made an API call to any of user interfaces **501**-**505** (step **402**). This determination, as before with web browser **307**, may be made by determining whether any user interface API calls were performed within a certain time period before or after the request for access link communications, for example an API call occurring within one second of the access link communication request.

In this example, messaging application called an API for displaying a notification in the upper left hand corner of display **505** and also called an API for playing a notification sound through speaker **502**. However, in step **402**, wireless device **301** determines that the API calls for notifications of this type are not API calls that would indicate that an application is running in the foreground. Therefore, wireless device **301** determines that messaging application **306** is running in the background and sets a bit in the probe that indicates that the dormancy timer for the access link should be set for a short period of time (step **406**).

In both examples from above, after the most recent communication exchange between wireless device **301** and base station **302** on the access link, base station **302** starts a dormancy timer in accordance with the bit from the probe transferred from wireless device **301**. Unless subsequent communications are exchanged on the access link that reset the dormancy timer, the dormancy timer will expire (step **412**). Once the dormancy timer expires, base station **302** releases the access link assigned to wireless device **301** so that the access link can be assigned to other wireless devices (step **414**).

FIG. **6** illustrates wireless communication device **600**. Wireless communication device **600** is an example of wireless communication devices **101** and **301**, although devices **101** and **301** could use alternative configurations. Wireless communication device **600** comprises wireless communication interface **601**, user interface **602**, and processing system **603**. Processing system **603** is linked to wireless communication interface **601** and user interface **602**. Processing system **603** includes processing circuitry **605** and memory device **606** that stores operating software **607**. Wireless communication device **601** may include other well-known components such as a battery and enclosure that are not shown for clarity. Wireless communication device **600** may be a telephone, computer, e-book, mobile Internet appliance, media player, game console, wireless network interface card, or some other wireless communication apparatus—including combinations thereof.

Wireless communication interface **601** comprises RF communication circuitry and an antenna. The RF communication circuitry typically includes an amplifier, filter, RF modulator, and signal processing circuitry. Wireless communication interface **601** may also include a memory device, software, processing circuitry, or some other communication device. Wireless communication interface **601** may use various protocols, such as CDMA, EVDO, WIMAX, GSM, LTE, WIFI, HSPA, or some other wireless communication format.

Wireless communication interface is configured to transfer a dormancy timer threshold to a wireless communication network that releases a wireless link to wireless communication device **600** if a dormancy timer for wireless communication device **600** reaches the dormancy timer threshold.

User interface **602** comprises components that interact with a user to receive user inputs and to present media and/or information. User interface **602** may include a speaker, microphone, buttons, lights, display screen, touch screen, touch pad, scroll wheel, communication port, or some other user input/output apparatus—including combinations thereof. User interface **602** may omitted in some examples.

Processing circuitry **605** comprises microprocessor and other circuitry that retrieves and executes operating software **607** from memory device **606**. Memory device **606** comprises a non-transitory storage medium, such as a disk drive, flash drive, data storage circuitry, or some other memory apparatus. Processing circuitry **605** is typically mounted on a circuit board that may also hold memory device **606** and portions of communication interface **601** and user interface **602**. Operating software **607** comprises computer programs, firmware, or some other form of machine-readable processing instructions. Operating software **607** includes monitor module **608** and dormancy timer threshold module **609**. Operating software **607** may further include an operating system, utilities, drivers, network interfaces, applications, or some other type of software. When executed by processing circuitry **605**, operating software **607** directs processing system **603** to operate wireless communication device **600** as described herein.

In particular, monitor module **608** of operating software **607** directs processing system **603** to monitor API calls from applications executing on processing system **603** for user interface functions and monitor status of user interface components of user interface **602**. Dormancy timer threshold module **609** then directs processing system **603** to process the API calls for the user interface functions and the status of the user interface components to set a dormancy timer threshold.

The above description and associated figures teach the best mode of the invention. The following claims specify the scope of the invention. Note that some aspects of the best mode may not fall within the scope of the invention as specified by the claims. Those skilled in the art will appreciate that the features described above can be combined in various ways to form multiple variations of the invention. As a result, the

invention is not limited to the specific embodiments described above, but only by the following claims and their equivalents.

What is claimed is:

1. A method of operating a wireless communication device, the method comprising:

determining user interface activity initiated by a user application;

determining a timer setting based on the user interface activity initiated by the user application;

wirelessly transferring the timer setting to a wireless communication network; and

exchanging wireless communications initiated by the user application with the wireless communication network, wherein the wireless communication network uses the timer setting to set a dormancy timer based on the user interface activity initiated by the user application, wherein the dormancy timer controls release of a wireless access link between the wireless communication network and the wireless communication device;

wherein determining the timer setting based on the user interface activity comprises selecting the timer setting to reduce the dormancy timer in response to a level of user interface activity below a threshold.

2. The method of claim **1** wherein determining the timer setting based on the user interface activity comprises selecting the timer setting to reduce the dormancy timer to zero in response to a level of user interface activity below a threshold.

3. The method of claim **1** wherein determining the timer setting based on the user interface activity comprises selecting the timer setting to reduce the dormancy timer if the user interface activity indicates the user application is running in a background.

4. The method of claim **1** wherein determining the timer setting based on the user interface activity comprises selecting the timer setting to increase the dormancy timer in response to a level of user interface activity above a threshold.

5. The method of claim **1** wherein determining the timer setting based on the user interface activity comprises selecting the timer setting to increase the dormancy timer if the user interface activity indicates the user application is running in a foreground.

6. The method of claim **1** wherein the user interface activity comprises audio component usage.

7. The method of claim **1** wherein the user interface activity comprises video component usage.

8. The method of claim **1** wherein the wireless communications comprise Long Term Evolution (LTE) communications.

9. The method of claim **1** wherein the wireless communication network uses the dormancy timer to terminate a communication channel to the wireless communication device.

10. A wireless communication device comprising:

a processor,

a processing system configured to determine user interface activity initiated by a user application and determine a timer setting based on the user interface activity initiated by the user application; and

a communication interface configured to wirelessly transfer the timer setting to a wireless communication network and to exchange wireless communications initiated by the user application with the wireless communication network, wherein the wireless communication network uses the timer setting to set a dormancy timer based on the user interface activity initiated by the user application, and wherein the dormancy timer controls release of a wireless access link between the wireless communication network and the wireless communication device;

wherein determining the timer setting based on the user interface activity comprises selecting the timer setting to reduce the dormancy timer in response to a level of user interface activity below a threshold.

11. The wireless communication device of claim **10** wherein the processing system is configured to select the timer setting to reduce the dormancy timer in response to a level of user interface activity below a threshold.

12. The wireless communication device of claim **10** wherein the processing system is configured to select the timer setting to reduce the dormancy timer to zero in response to a level of user interface activity below a threshold.

13. The wireless communication device of claim **10** wherein the processing system is configured to select the timer setting to reduce the dormancy timer if the user interface activity indicates the user application is running in a background.

14. The wireless communication device of claim **10** wherein the processing system is configured to select the timer setting to increase the dormancy timer in response to a level of user interface activity above a threshold.

15. The wireless communication device of claim **10** wherein the processing system is configured to select the timer setting to increase the dormancy timer if the user interface activity indicates the user application is running in a foreground.

16. The wireless communication device of claim **10** wherein the user interface activity comprises audio component usage.

17. The wireless communication device of claim **10** wherein the user interface activity comprises video component usage.

18. The wireless communication device of claim **10** wherein the wireless communications comprise Long Term Evolution (LTE) communications.

19. The wireless communication device of claim **10** wherein the wireless communication network uses the dormancy timer to terminate a communication channel to the wireless communication device.

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